

SHARP

SUPPLEMENTAL SERVICE MANUAL

S100M140R419E



R-419CK

MICROWAVE OVEN

MODEL **R-419CK**

In the interest of user-safety the oven should be restored to its original condition and only parts identical to those specified should be used.

WARNING TO SERVICE PERSONNEL: Microwave ovens contain circuitry capable of producing very high voltage and current, contact with following parts may result in a severe, possibly fatal, electrical shock. (High Voltage Capacitor, High Voltage Power Transformer, Magnetron, High Voltage Rectifier Assembly, High Voltage Harness etc..)

This is a supplemental Service Manual for Microwave Oven model R-419CK. This model is quite similar to the base model R-420CK (S/M# S49M132R420CE).

This supplemental manual must be used in conjunction with the base model service manual for complete operation, service, safety and replacement parts information.

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SHARP ELECTRONICS CORPORATION

This document has been published to be used for after sales service only.

The contents are subject to change without notice.

Service Headquarters: Sharp Plaza, Mahwah, New Jersey, 07430-2135

PRECAUTIONS TO BE OBSERVED BEFORE AND DURING SERVICING TO AVOID POSSIBLE EXPOSURE TO EXCESSIVE MICROWAVE ENERGY

- (a) Do not operate or allow the oven to be operated with the door open.
- (b) Make the following safety checks on all ovens to be serviced before activating the magnetron or other microwave source, and make repairs as necessary: (1) interlock operation, (2) proper door closing, (3) seal and sealing surfaces (arcing, wear, and other damage), (4) damage to or loosening of hinges and latches, (5) evidence of dropping or abuse.
- (c) Before turning on microwave power for any service test or inspection within the microwave generating compartments, check the magnetron, wave guide or transmission line, and cavity for proper alignment, integrity, and connections.
- (d) Any defective or misadjusted components in the interlock, monitor, door seal, and microwave generation and transmission systems shall be repaired, replaced, or adjusted by procedures described in this manual before the oven is released to the owner.
- (e) A microwave leakage check to verify compliance with the Federal Performance Standard should be performed on each oven prior to release to the owner.

BEFORE SERVICING

Before servicing an operative unit, perform a microwave emission check as per the Microwave Measurement Procedure outlined in this service manual.

If microwave emissions level is in excess of the specified limit, contact SHARP ELECTRONICS CORPORATION immediately @1-800-237-4277.

If the unit operates with the door open, service person should 1) tell the user not to operate the oven and 2) contact SHARP ELECTRONICS CORPORATION and Food and Drug Administration's Center for Devices and Radiological Health immediately.

Service personnel should inform SHARP ELECTRONICS CORPORATION of any certified unit found with emissions in excess of $4\text{mW}/\text{cm}^2$. The owner of the unit should be instructed not to use the unit until the oven has been brought into compliance.

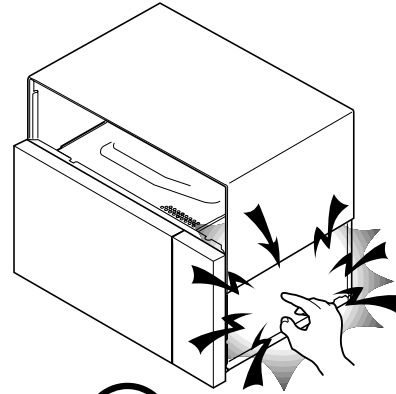
WARNING TO SERVICE PERSONNEL

Microwave ovens contain circuitry capable of producing very high voltage and current, contact with following parts may result in a severe, possibly fatal, electrical shock.

(Example)

High Voltage Capacitor, High Voltage Power Transformer, Magnetron, High Voltage Rectifier Assembly, High Voltage Harness etc..

Read the Service Manual carefully and follow all instructions.



**Don't Touch !
Danger High Voltage**

Before Servicing



1. Disconnect the power supply cord , and then remove outer case.
2. Open the door and block it open.
3. Discharge high voltage capacitor.

WARNING: RISK OF ELECTRIC SHOCK. DISCHARGE THE HIGH-VOLTAGE CAPACITOR BEFORE SERVICING.

The high-voltage capacitor remains charged about 60 seconds after the oven has been switched off. Wait for 60 seconds and then short-circuit the connection of the high-voltage capacitor (that is the connecting lead of the high-voltage rectifier) against the chassis with the use of an insulated screwdriver.

Whenever troubleshooting is performed the power supply must be disconnected. It may in, some cases, be necessary to connect the power supply after the outer case has been removed, in this event,

1. Disconnect the power supply cord, and then remove outer case.
2. Open the door and block it open.
3. Discharge high voltage capacitor.
4. Disconnect the leads to the primary of the power transformer.
5. Ensure that the leads remain isolated from other components and oven chassis by using insulation tape.
6. After that procedure, reconnect the power supply cord.

When the testing is completed,

1. Disconnect the power supply cord, and then remove outer case.
2. Open the door and block it open.
3. Discharge high voltage capacitor.
4. Reconnect the leads to the primary of the power transformer.
5. Reinstall the outer case (cabinet).
6. Reconnect the power supply cord after the outer case is installed.
7. Run the oven and check all functions.

After repairing

1. Reconnect all leads removed from components during testing.
2. Reinstall the outer case (cabinet).
3. Reconnect the power supply cord after the outer case is installed.
4. Run the oven and check all functions.

Microwave ovens should not be run empty. To test for the presence of microwave energy within a cavity, place a cup of cold water on the oven turntable, close the door and set the power to HIGH and set the microwave timer for two (2) minutes. When the two minutes has elapsed (timer at zero) carefully check that the water is now hot. If the water remains cold carry out **Before Servicing** procedure and re-examine the connections to the component being tested.

When all service work is completed and the oven is fully assembled, the microwave power output should be checked and a microwave leakage test should be carried out.

MICROWAVE MEASUREMENT PROCEDURE

A. Requirements:

- 1) Microwave leakage limit (Power density limit): The power density of microwave radiation emitted by a microwave oven should not exceed $1\text{mW}/\text{cm}^2$ at any point 5cm or more from the external surface of the oven, measured prior to acquisition by a purchaser, and thereafter (through the useful life of the oven), $5\text{mW}/\text{cm}^2$ at any point 5cm or more from the external surface of the oven.
- 2) Safety interlock switches Primary interlock relay and door sensing switch shall prevent microwave radiation emission in excess of the requirement as above mentioned, secondary interlock switch shall prevent microwave radiation emission in excess of $5\text{mW}/\text{cm}^2$ at any point 5cm or more from the external surface of the oven.

B. Preparation for testing:

Before beginning the actual measurement of leakage, proceed as follows:

- 1) Make sure that the actual instrument is operating normally as specified in its instruction booklet.

Important:

Survey instruments that comply with the requirement for instrumentation as prescribed by the performance standard for microwave ovens, 21 CFR 1030.10(c)(3)(i), must be used for testing.

- 2) Place the oven tray in the oven cavity.
- 3) Place the load of 275 ± 15 ml (9.8 oz) of tap water initially at $20 \pm 5^\circ\text{C}$ (68°F) in the center of the oven cavity.
The water container shall be a low form of 600 ml (20 oz) beaker with an inside diameter of approx. 8.5 cm (3-1/2 in.) and made of an electrically nonconductive material such as glass or plastic.
The placing of this standard load in the oven is important not only to protect the oven, but also to insure that any leakage is measured accurately.
- 4) Set the cooking control on Full Power Cooking Mode.
- 5) Close the door and select a cook cycle of several minutes. If the water begins to boil before the survey is completed, replace it with 275 ml of cool water.

C. Leakage test:

Closed-door leakage test (microwave measurement)

- 1) Grasp the probe of the survey instrument and hold it perpendicular to the gap between the door and the body of the oven.
- 2) Move the probe slowly, not faster than 1 in./sec. (2.5 cm/sec.) along the gap, watching for the maximum indication on the meter.
- 3) Check for leakage at the door screen, sheet metal seams and other accessible positions where the continuity of the metal has been breached (eg., around the switches, indicator, and vents).
While testing for leakage around the door pull the door away from the front of the oven as far as is permitted by the closed latch assembly.
- 4) Measure carefully at the point of highest leakage and make sure that the highest leakage is no greater than $4\text{mW}/\text{cm}^2$, and that the secondary interlock switch does turn the oven OFF before any door movement.

NOTE: After servicing, record data on service invoice and microwave leakage report.

SERVICE MANUAL

SHARP

MICROWAVE OVEN

R-419CK

FOREWORD

This Manual has been prepared to provide Sharp Electronics Corp. Service Personnel with Operation and Service Information for the SHARP MICROWAVE OVEN, R-419CK.

It is recommended that service personnel carefully study the entire text of this manual so that they will be qualified to render satisfactory customer service.

Check the interlock switches and the door seal carefully. Special attention should be given to avoid electrical shock and microwave radiation hazard.

WARNING

Never operate the oven until the following points are ensured.

- (A) The door is tightly closed.
- (B) The door brackets and hinges are not defective.
- (C) The door packing is not damaged.
- (D) The door is not deformed or warped.
- (E) There is no other visible damage with the oven.

Servicing and repair work must be carried out only by trained service personnel.

DANGER

Certain initial parts are intentionally not grounded and present a risk of electrical shock only during servicing. Service personnel - Do not contact the following parts while the appliance is energized;

High Voltage Capacitor, Power Transformer, Magnetron, High Voltage Rectifier Assembly, High Voltage Harness;

If provided, Vent Hood, Fan assembly, Cooling Fan Motor.

All the parts marked "*" on parts list are used at voltages more than 250V.

Removal of the outer wrap gives access to voltage above 250V.

All the parts marked "Δ" on parts list may cause undue microwave exposure, by themselves, or when they are damaged, loosened or removed.

PRODUCT DESCRIPTION

GENERAL INFORMATION

OPERATION

TROUBLESHOOTING GUIDE AND
TEST PROCEDURE

WIRING DIAGRAM

PARTS LIST

SHARP ELECTRONICS CORPORATION

SHARP PLAZA, MAHWAH,
NEW JERSEY 07430-2135

SPECIFICATION

ITEM	DESCRIPTION
Power Requirements	120 Volts / 13.3 Amperes/1550Watts 60 Hertz Single phase, 3 wire grounded
Power Output	1100 watts (IEC-705 TEST PROCEDURE) Operating frequency of 2450MHz
Case Dimensions	Width 21-11/16" Height 12-3/8" Depth 17-3/8"
Cooking Cavity Dimensions 1.4 Cubic Feet	Width 15" Height 9-7/16" Depth 16-3/4" Tray Size 14-1/8" Diameter
Control Complement	Touch Control System Clock (1:00 - 12:59) Timer (0 - 99 min. 99 seconds) Microwave Power for Variable Cooking Repetition Rate; P-HI Full power throughout the cooking time P-90 approx. 90% of Full Power P-80 approx. 80% of Full Power P-70 approx. 70% of Full Power P-60 approx. 60% of Full Power P-50 approx. 50% of Full Power P-40 approx. 40% of Full Power P-30 approx. 30% of Full Power P-20 approx. 20% of Full Power P-10 approx. 10% of Full Power P-0 No power throughout the cooking time BEVERAGE pad MINUTE PLUS pad, INSTANT ACTION pads COMPU DEFROST pads, Number selection pads Power Level pad, Timer/Clock pad Stop/Clear pad, START pad
Oven Cavity Light	Yes
Safety Standard	UL Listed FCC Authorized DHHS Rules, CFR, Title 21, Chapter 1, Subchapter J

GENERAL INFORMATION

GROUNDING INSTRUCTIONS

This oven is equipped with a three prong grounding plug. It must be plugged into a wall receptacle that is properly installed and grounded in accordance with the National Electrical Code and local codes and ordinances. In the event of an electrical short circuit, grounding reduces the risk of electric shock by providing an escape wire for the electric current.

WARNING: Improper use of the grounding plug can result in a risk of electric shock.

Electrical Requirements

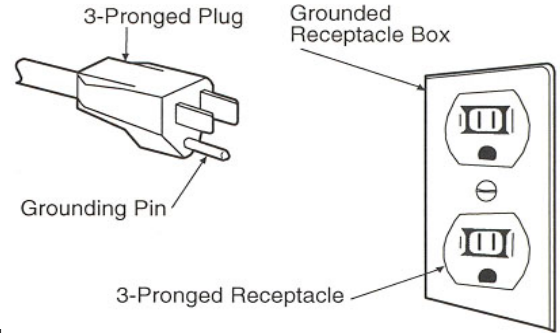
The electrical requirements are a 120 volt 60 Hz, AC only, 15 or 20 amp. fused electrical supply. It is recommended that a separate circuit serving only this appliance be provided. When installing this appliance, observe all applicable codes and ordinances.

A short power-supply cord is provided to reduce risks of becoming entangled in or tripping over a longer cord.

Where a two-pronged wall-receptacle is encountered, it is the personal responsibility and obligation of the customer to contact

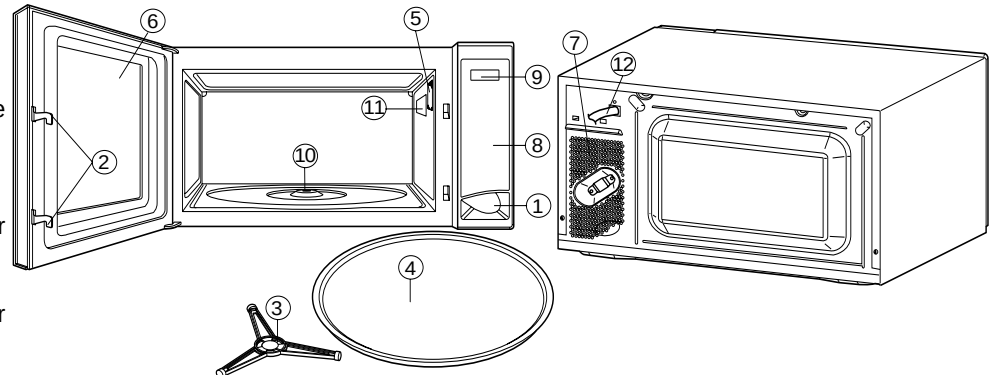
a qualified electrician and have it replaced with a properly grounded three-pronged wall receptacle or have a grounding adapter properly grounded and polarized. If the extension cord must be used, it should be a 3-wire, 15 amp. or higher rated cord. Do not drape over a countertop or table where it can be pulled on by children or tripped over accidentally.

CAUTION: DO NOT UNDER ANY CIRCUMSTANCES CUT OR REMOVE THE ROUND GROUNDING PRONG FROM THIS PLUG.



OVEN DIAGRAM

1. One touch door open button.
Push to open door.
2. Door latches.
The oven will not operate unless the door is securely closed.
3. Removable turntable support.
The turntable will rotate clockwise or counterclockwise.
4. Removable turntable.
It will light when oven is operating or door is opened.
6. Oven door with see-through window.
7. Ventilation openings. (Rear)
8. Auto-Touch control panel.
9. Time display: Digital display, 99 minutes 99 seconds.



TOUCH CONTROL PANEL



OPERATION

DESCRIPTION OF OPERATING SEQUENCE

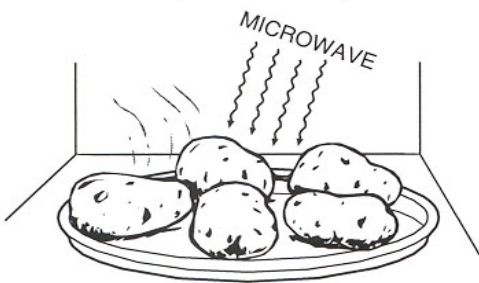
SENSOR COOKING CONDITION

Using the SENSOR function, food is cooked without figuring time, power level or quantity. When the oven senses enough steam from the food, it relays the information to its microprocessor which will calculate the remaining cooking time and power level needed for best results. When the food is cooked, water vapor is developed. The sensor "senses" the vapour and its resistance increase gradually. When the resistance reaches the value set according to the menu, supplementary cooking is started.

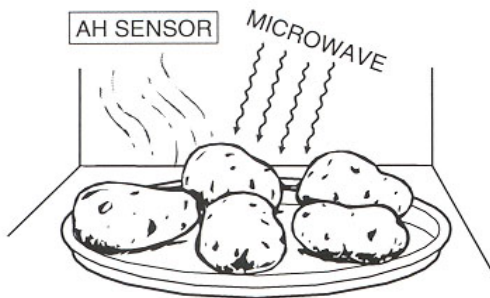
The time of supplementary cooking is determined by experiment with each food category and inputted into the LSI. An example of how sensor works: (Potatoes)



1. Potatoes at room temperature. Vapor is emitted very slowly.



2. Heat Potatoes. Moisture and humidity is emitted very rapidly. You can smell the aroma as it cooks.



3. Sensor detects moisture and humidity and calculates cooking time and variable power.

Cooking Sequence.

1. Touch one of the SENSOR pads.

NOTE: The oven should not be operated on sensor immediately after plugging in the unit. Wait two minutes before cooking on SENSOR.

2. The coil of shut-off relay (RY-1) is energized, the turntable motor are turned on, but the power transformer is not turned on.
3. After about 16 seconds, the cook relay (RY-2) is energized. The power transformer is turned on, microwave energy is produced and first stage is started. The 16 seconds is the cooling time required to remove any vapor from the oven cavity and sensor.

NOTE: During this first stage, do not open the door or touch STOP/CLEAR pad.

4. When the sensor detects the vapor emitted from the food, the display switches over to the remaining cooking time and the timer counts down to zero. At this time, the door may be opened to stir, turn or season food.
5. When the timer reaches zero, an audible signal sounds. The shut-off relay and cook relay are de-energized and the power transformer, oven lamp, etc. are turned off.
6. Opening the door or touching the STOP/CLEAR pad, the time of the day will reappear on the display and the oven will revert to an OFF condition. When the timer reaches zero, an audible signal sounds.

SCHEMATIC**NOTE: CONDITION OF OVEN**

1. Door Closed
2. CLOCK APPEARS ON DISPLAY

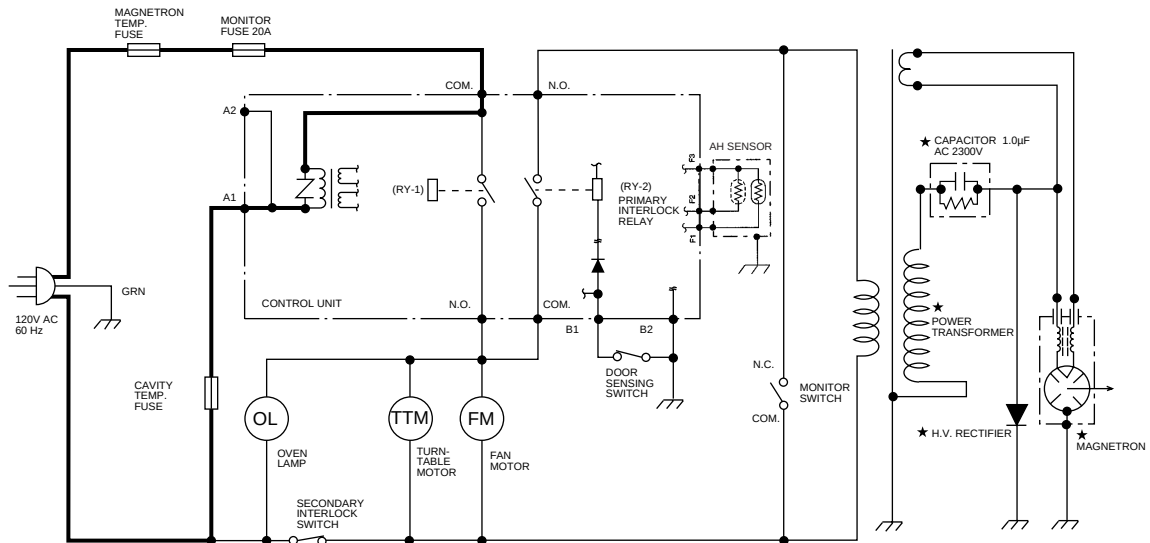
Note: * Indicates components with potential above 250V.

Figure O-1 Oven Schematic - Off Condition

SCHEMATIC**NOTE: CONDITION OF OVEN**

1. DOOR CLOSED
2. COOKING TIME PROGRAMMED
3. VARIABLE COOKING CONTROL "HIGH"
4. "START" PAD TOUCHED

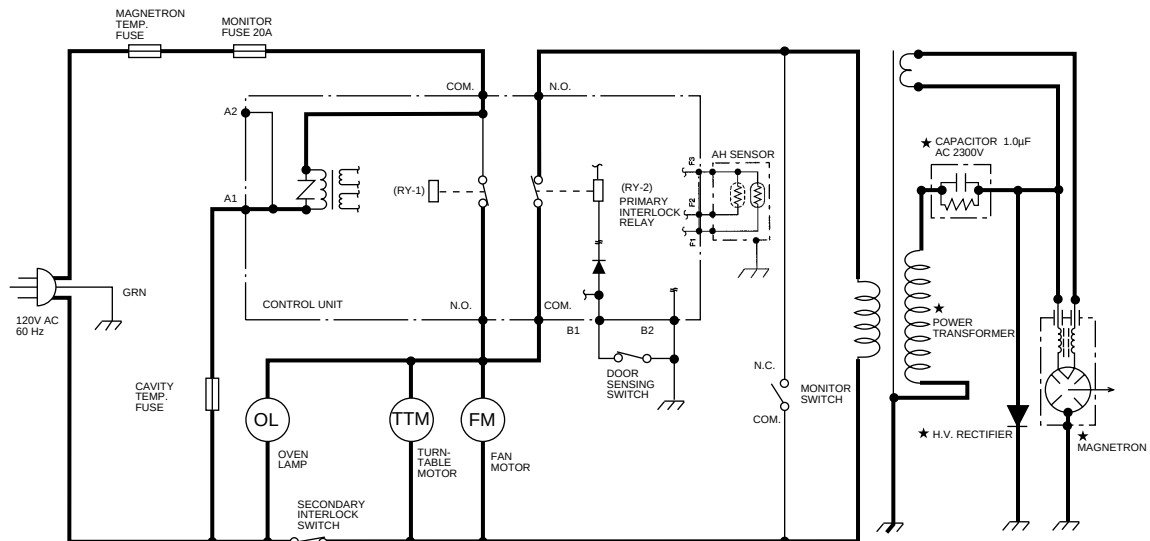


Figure O-2 Oven Schematic - Cooking Condition

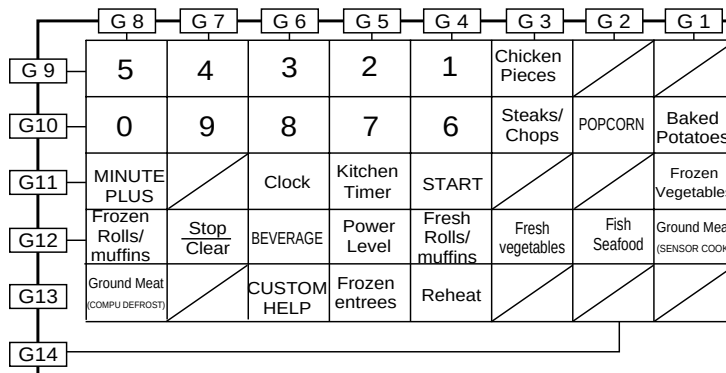
TEST PROCEDURES

PROCEDURE LETTER

COMPONENT TEST

J KEY UNIT TEST

1. Disconnect the power supply cord, and then remove outer case.
2. Open the door and block it open.
3. Discharge high voltage capacitor.
4. If the display fails to clear when the STOP/CLEAR pad is depressed, first verify the flat ribbon cable is making good contact, verify that the door sensing switch (stop switch) operates properly; that is the contacts are closed when the door is closed and open when the door is open. If the door sensing switch (stop switch) is good, disconnect the flat ribbon cable that connects the key unit to the control unit and make sure the door sensing switch is closed (either close the door or short the door sensing switch connector). Use the Key unit matrix indicated on the control panel schematic and place a jumper wire between the pins that correspond to the STOP/CLEAR pad making momentary contact. If the control unit responds by clearing with a beep the key unit is faulty and must be replaced. If the control unit does not respond, it is faulty and must be replaced. If a specific pad does not respond, the above method may be used (after clearing the control unit) to determine if the control unit or key pad is at fault.
5. Reconnect all leads removed from components during testing.
6. Re-install the outer case (cabinet).
7. Reconnect the power supply cord after the outer case is installed.
8. Run the oven and check all functions.



Key Unit

L COMPU DEFROST TEST

WARNING : The oven should be fully assembled before following procedure.

- (1) Place one cup of water in the center of the turntable tray in the oven cavity.
- (2) Close the door, touch the " steaks / chops " pad once.
- (3) The oven is in Compu Defrost cooking condition.
- (4) The oven will operate as follows

WEIGHT	1ST STAGE		2ND STAGE	
	LEVEL	TIME	LEVEL	TIME
0.5lb	60%	27sec.	40%	17sec.

- (5) If improper operation is indicated, the control unit is probably defective and should be checked.

TEST PROCEDURES

PROCEDURE LETTER	COMPONENT TEST
N	<u>AH SENSOR TEST</u> Checking the initial sensor cooking condition Warning: The oven should be fully assembled before following procedure. 1) The oven should be plugged in at least two minutes before sensor cooking. 2) Room temperature should not exceed 95°F(35°C). 3) The unit should not be installed in any area where heat and steam are generated. The unit should not be installed for example, next to conventional surface unit. Refer to the "INSTALLATION INSTRUCTIONS" of the operational manual. (4) Exhaust vents are provided on the back of the unit for proper cooling and air flow in the cavity. To permit adequate ventilation, be sure to install so as not to block these vents. There should be some space for air circulation. (5) Be sure the exterior of the cooking container and the interior of the oven are dry. Wipe off any moisture with dry cloth or paper towel. (6) The Sensor works with food at normal storage temperature. For example, chicken pieces would be at refrigerator temperature and canned soup at room temperature. (7) Avoid using aerosol sprays or cleaning solvents near the oven while using Sensor settings. The sensor will detect the vapour given off by the spray and turn off before food is properly cooked. (8) If the sensor has not detected the vapour of the food, ERROR will appear and the oven will shut off. Water load cooking test Warning: The oven should be fully assembled before following procedure. Make sure the oven has been plugged in at least two minutes before checking sensor cook operation. The cabinet should be installed and screws tightened. (1) The oven should be plugged in at least two minutes before sensor cooking. (2) Fill approximately 200 millilitres (7.2 oz) of tap water in 1000 millilitres measuring cup. (3) Place the container on the center of tray in the oven cavity. (4) Close the door. (5) Touch REHEAT pad once. Now, the oven is in the sensor cooking condition and "REHEAT" "SENSOR" will appear in the display. (6) The oven will operate for the first 16 seconds, without generating microwave energy. NOTE: ERROR will appear if the door is opened or STOP/CLEAR pad is touched during the first stage of sensor cooking. (7) After approximately 16 seconds, microwave energy is produced, and the display should start to count down the remaining cooking time and the oven should turn off after water is boiling (bubbling). If the oven does not turn off, replace the AH sensor or check the control unit, refer to explanation below.

TESTING METHOD FOR AH SENSOR AND /OR CONTROL UNIT

To determine if the sensor is defective, the simplest method is to replace it with a new replacement sensor.

- (1) Disconnect the power supply cord, and then remove outer case.
- (2) Open the door and block it open.
- (3) Discharge high voltage capacitor.
- (4) Remove the AH sensor.
- (5) Install the new AH sensor.
- (6) Reconnect all leads removed from components during testing.
- (7) Re-install the outer case (cabinet)
- (8) Reconnect the power supply cord after the outer case is installed.
- (9) Reconnect the oven to the power supply and check the sensor cook operation as follows:
 - 9-1. Fill approximately 200 millilitres (7.2 oz) of tap water in a 1000 millilitre measuring cup.
 - 9-2. Place the container on the center of tray in the oven cavity.
 - 9-3. close the door.
 - 9-4. Touch REHEAT pad once.
 - 9-5. The control panel is in automatic sensor operation.
 - 9-6. The display will start to count down the remaining cooking time, and the oven will turn off automatically after the water is boiling (bubbling).

If new sensor does not operate properly, the problem is with the control unit, and refer to explanation below.

TEST PROCEDURES

PROCEDURE LETTER

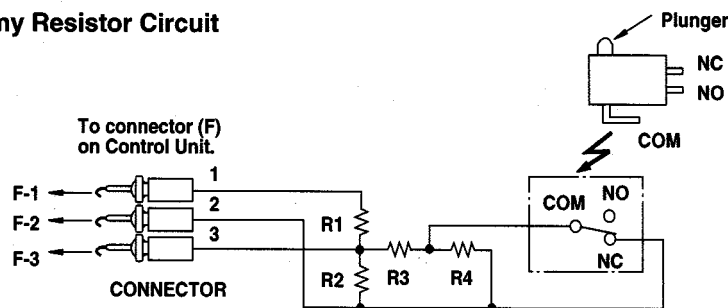
COMPONENT TEST

CHECKING CONTROL UNIT

- (1) Disconnect the power supply cord, and then remove outer case.
- (2) Open the door and block it open.
- (3) Discharge high voltage capacitor.
- (4) Disconnect the sensor connector that is mounted to control panel.
- (5) Then connect the dummy resistor circuit (see fig.) to the sensor connector of control panel.
- (6) Disconnect the leads to the primary of power transformer.
- (7) Ensure that these leads remain isolated from other components and oven chassis by using insulation tape.
- (8) After that procedure, re-connect the power supply cord.
- (9) Check the sensor cook operation proceed as follows:
 - 9-1 Touch REHEAT pad once.
 - 9-2 The control panel is in the sensor cooking operation.
 - 9-3 After approximately 30 seconds, push plunger of select switch for more than 3 seconds. This condition is same as judgement by AH sensor.
 - 9-4 After approximately 3 seconds, the display shows "xx.xx" which is remaining cooking time, and the display count down.

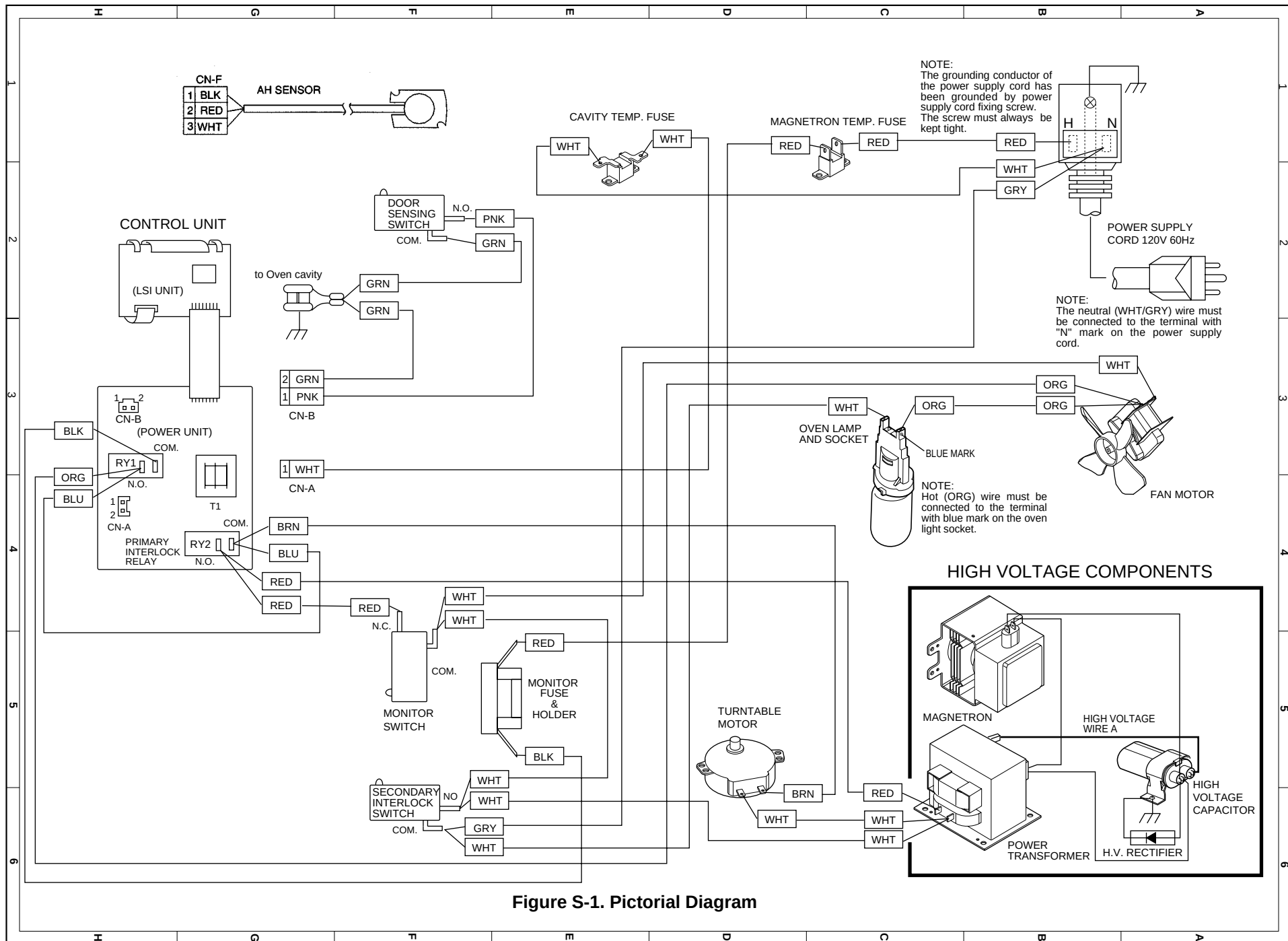
If the above is not the case, the control unit is probably defective.
If the above is proper, the AH sensor is probably defective.
- (10) Disconnect the power supply cord, and then remove outer case.
- (11) Open the door and block it open.
- (12) Discharge high voltage capacitor.
- (13) Reconnect the sensor connector that is mounted to control panel.
- (14) Carry out the necessary repair.
- (15) Reconnect all leads removed from components during testing and repairing.
- (16) Re-install the outer case (cabinet)
- (17) Reconnect the power supply cord after the outer case is installed. Run the oven and check all functions
- (18) Carry out the "water load cooking test" again and ensure that the oven work properly.

Sensor Dummy Resistor Circuit



R1,R2 : $22\Omega \pm 1\%$ 1/2W
 R3 : $4.3k\Omega \pm 5\%$ 1/4W
 R4 : $1M\Omega \pm 5\%$ 1/4W

Sensor Dummy Resistor Circuit



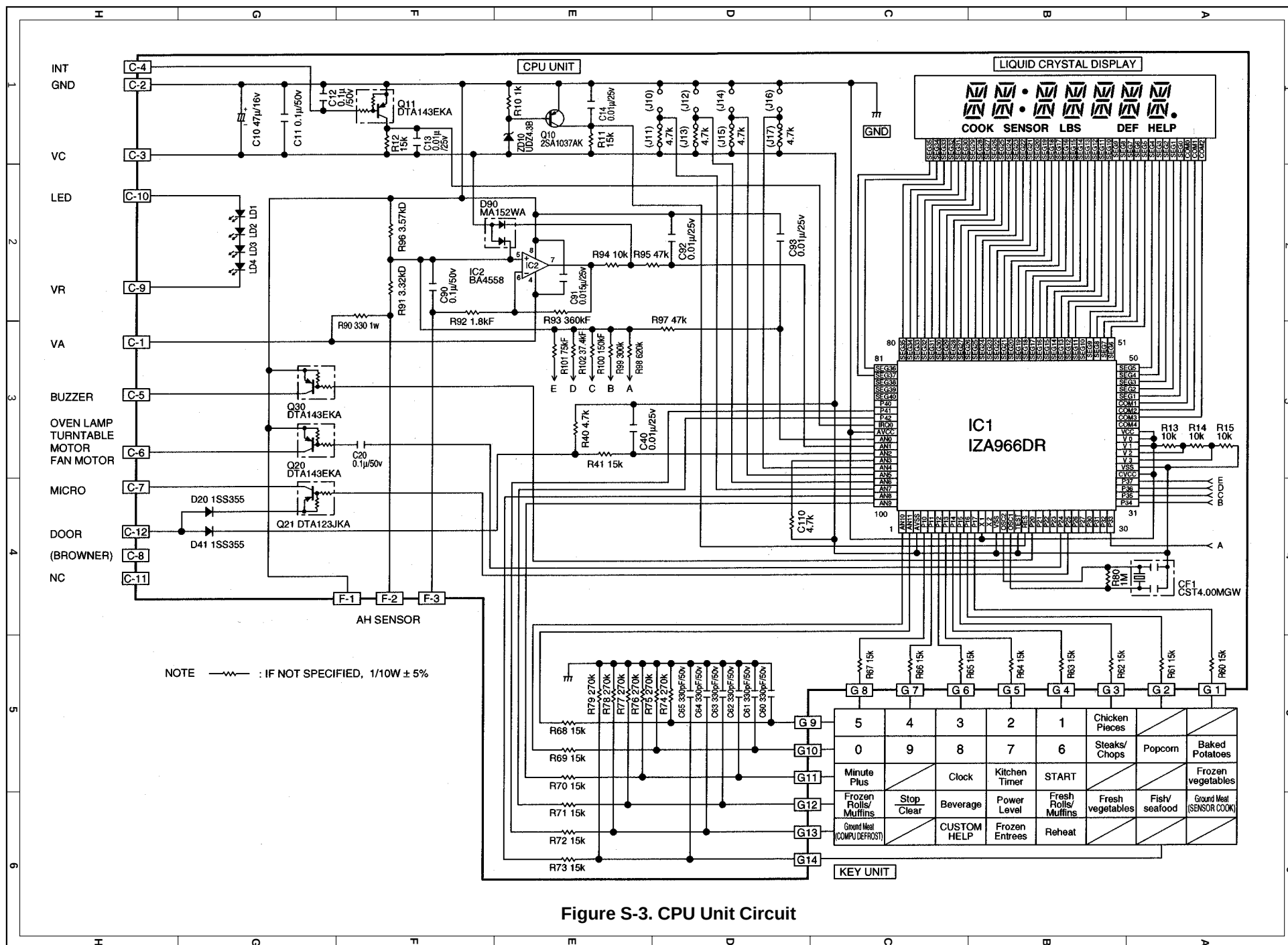


Figure S-3. CPU Unit Circuit

PARTS LIST

Note: The parts marked “Δ” may cause undue microwave exposure.

The parts marked “*” are used in voltage more than 250V. “§” MARK: PARTS DELIVERY SECTION.

REF. NO.	PART NO.	§	DESCRIPTION	Q'TY	CODE
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ELECTRIC PARTS

* 1- 1	RC-QZB018MRE0	M	High voltage capacitor	1	AQ
* 1- 2	FH-DZB013MRY0	M	High voltage rectifier assembly	1	AK
1- 3	QSOCLB006MRE0	M	Oven lamp socket	1	AE
1- 4	RLMPTA068WRE0	M	Oven lamp	1	AE
1- 5	RMOTEA346WRE0	M	Fan motor	1	AR
1- 6	QFSHDB003MRE0	M	Fuse holder	1	AD
1- 7	FFS-BA016/KIT	M	Monitor switch (V-16G-2C25) and fuse assembly (20A 250V AC)	1	AF
1- 8	QSW-MA085WRE0	M	Secondary interlock switch and door sensing switch (V-16G-3C25)	2	AE
1- 9	QFS-TA013WRE0	M	Magnetron temperature fuse 150°C	1	AE
1-10	QFS-TA014WRE0	M	Cavity temperature fuse 150°C	1	AF
* Δ 1-11	RV-MZA290WRE0	M	Magnetron	1	BC
1-12	RMOTDA211/KIT	M	Turntable motor	1	AL
* 1-13	RTRN-B065MRE0	M	Power transformer	1	BD
1-14	FACCD001MRE0	M	Power supply cord	1	AL
1-15	FDTCTA198WRK0	M	AH sensor	1	AN

CABINET PARTS

2- 1	GDAI-B053MRP0	M	Base plate	1	AR
2- 2	GLEGPB004MRF0	M	Foot	4	AB
2- 3	GCABUB097MRP0	M	Outer case cabinet	1	BC

CONTROL PANEL PARTS

3- 1	CPWFB031MRU0	M	Control unit	1	BL
3- 1A	QCNCMA446DRE0	J	2-pin connector (CN-A)	1	AC
3- 1B	QCNCMA275DRE0	J	2-pin connector (CN-B)	1	AB
3- 1C	FW-VZB146MRE0	M	12Pin wire harness (CN-C)	1	AG
C1	RC-KZA087DRE0	J	Capacitor 0.1 uF 50V	1	AA
C2	VCEAB31VW108M	J	Capacitor 1000 uF 35V	1	AF
C3	RC-KZA087DRE0	J	Capacitor 0.1 uF 50V	1	AA
C4-5	VCEAB31VW106M	J	Capacitor 10 uF 35V	1	AF
D1-4	VHD11ES1///-1	J	Diode (11ES1)	4	AB
D5-8	VHD1SS270A/-1	J	Diode (1SS270ATA)	4	AA
Q1-2	VS2SB1238// -3	J	Transistor (2SB1238)	2	AA
Q3	VSKRC243M// -3	J	Transistor (KRC243M)	1	AB
R1	VRD-B12EF242J	J	Resistor 2.4k ohm 1/4W	1	AA
R2	VRD-B12HF681J	J	Resistor 680 ohm 1/2W	1	AA
R3	VRD-B12HF511J	J	Resistor 510 ohm 1/2W	1	AB
R4	VRD-B12EF270J	J	Resistor 27 ohm 1/4W	1	AA
R5	VRD-B12EF472J	J	Resistor 4.7k ohm 1/4W	1	AA
R6	VRD-B12EF332J	J	Resistor 3.3k ohm 1/4W	1	AA
RY1-2	RRLY-B002MRE0	J	Relay (DU24D1-1P(M))	2	AH
RY1-2	RRLY-A113DRE0	J	Relay (DU24D1-1P(M)) Interchangeable	2	AG
SP1	RALM-A014DRE0	J	Buzzer (PKM22EPT)	1	AG
T1	RTRNPB009MRE0	M	Transformer	1	AM
VRS1	RH-VZA032DRE0	J	Varistor (10G471K)	1	AE
ZD1	VHEHZ161///-1	J	Zener diode (HZ16-1)	1	AA
3- 2	FPNLCB311MRK0	M	Control panel frame with key unit	1	AX
3- 2-1	FUNTKB192MRE0	M	Key unit	1	AW
3- 2-2	JBTN-B092MRF0	M	Open button	1	AE
3-2-3	MSPRTA050WRE0	M	Open button spring	1	AA
3- 3	LHLD-B009MRF0	M	LCD holder	1	AF
3- 4	PSHEPB023MRE0	M	LED sheet	1	AR
3- 5	XEPSD30P10XS0	M	Screw; 3mm x 10mm	1	AB

OVEN PARTS

4- 1	LBNDKB007MRP0	M	H.V. Capacitor band	1	AB
4- 2	LANGTB044MRP0	M	Chassis support	1	AE
4- 3	PHOK-B018MRF0	M	Latch hook	1	AF
4- 4	MLEVPB016MRF0	M	Switch lever	1	AD
4- 5	PDUC-B089MRF0	M	Magnetron duct	1	AF

REF. NO.	PART NO.	S	DESCRIPTION	Q'TY	CODE
4- 6	NFANPB001MRE0	M	Fan blade	1	AC
4- 7	PDUC-B088MRF0	M	Fan duct	1	AC
4- 8	-----	M	Oven cavity (Not a replaceable part)	1	--
4- 9	PCOVBP073MRP0	M	Waveguide cover	1	AC
4-10	PPACGB014MRF0	M	Turntable motor packing	1	AA
4-11	PDUC-B101MRP0	M	AH sensor duct	1	AF
4-12	PCUSGB033MRP0	M	Cushion	1	AA
4-13	PCUSGB028MRP0	M	Cushion	1	AA

DOOR PARTS

5 -1	FCOV-B154MRK0	M	Door frame assembly [R-420CK]	1	AV
5-1-1	LSTPPB021MRF0	M	Latch head	1	AD
5-1-2	MSPRTA046WRE0	M	Latch spring	1	AB
5-2	FDORFB062MRT0	M	Door panel	1	AV
5- 3	PSHEPB021MRE0	M	Sealer film	1	AE
5- 4	GCOVHB041MRF0	M	Choke cover	1	AG
5- 5	HPNL-B087MRE0	M	Door screen	1	AK

MISCELLANEOUS

6- 1	FW-VZB125MRE0	M	Stop switch harness	1	AU
6- 2	FW-VZB168MRE0	M	Main wire harness	1	AU
6- 3	QW-QZB016MRE0	M	High voltage wire A	1	AC
6- 4	FROLPB025MRK0	M	Turntable support	1	AN
6- 5	NTNT-A095WRE0	M	Turntable tray	1	AN
6- 6	TCAUAB037MRR0	M	Monitor caution label	1	AA
6- 7	TCAUAB038MRR0	M	DHHS/Screw caution label	1	AB
6- 8	TINSEB222MRR0	M	Operation manual	1	AF

SCREWS, NUTS AND WASHERS

7- 1	LX-BZA041WRE0	M	Special screw	1	AA
7- 2	LX-CZ0052WRE0	M	Special screw	3	AA
7- 3	XHTSD40P12RV0	M	Screw : 4mm x 12mm	1	AA
7- 4	LX-BZ0081YBE0	M	Special screw	4	AA
7- 5	XOTSD40P12000	M	Screw : 4mm x 12mm	12	AA
7- 6	XCBSD30P08000	M	Screw : 3mm x 8mm	2	AA
7- 7	LX-CZA038WRE0	M	Special screw	2	AA
7- 8	XHTSD40P08RV0	M	Screw : 4mm x 8mm	3	AA
7-10	LX-CZA070WRE0	M	Special screw (Torx tamper proof screw)	2	AC
7-11	XCPSD30P08000	M	Screw : 3mm x 8mm	2	AA

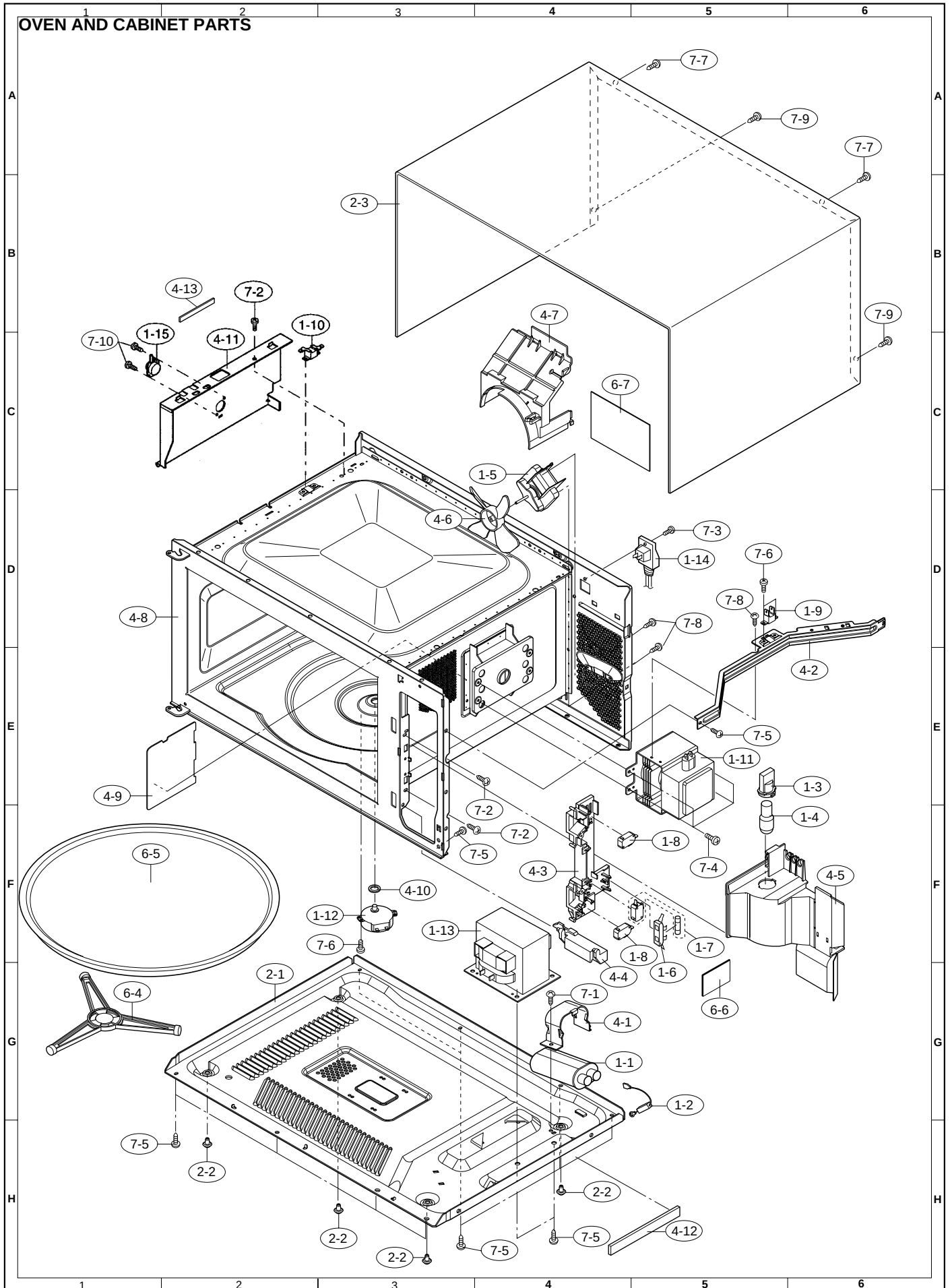
HOW TO ORDER REPLACEMENT PARTS

To have your order filled promptly and correctly, please furnish the following information.

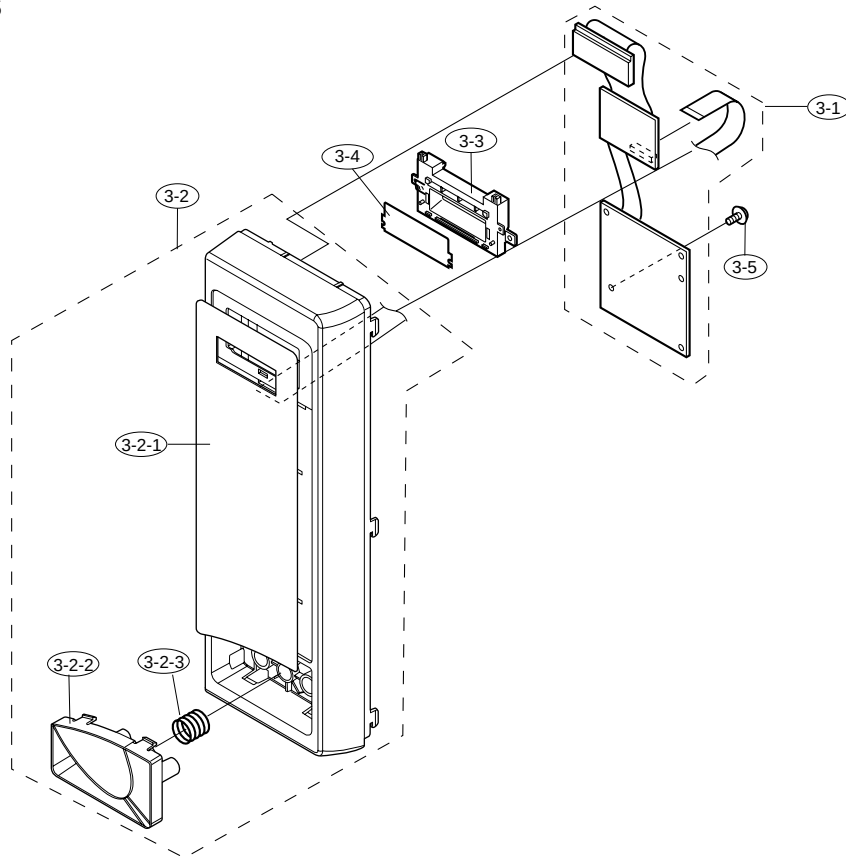
1. MODEL NUMBER
2. REF. NO.
3. PART NO.
4. DESCRIPTION

Order Parts from the authorized SHARP parts Distributor for your area.

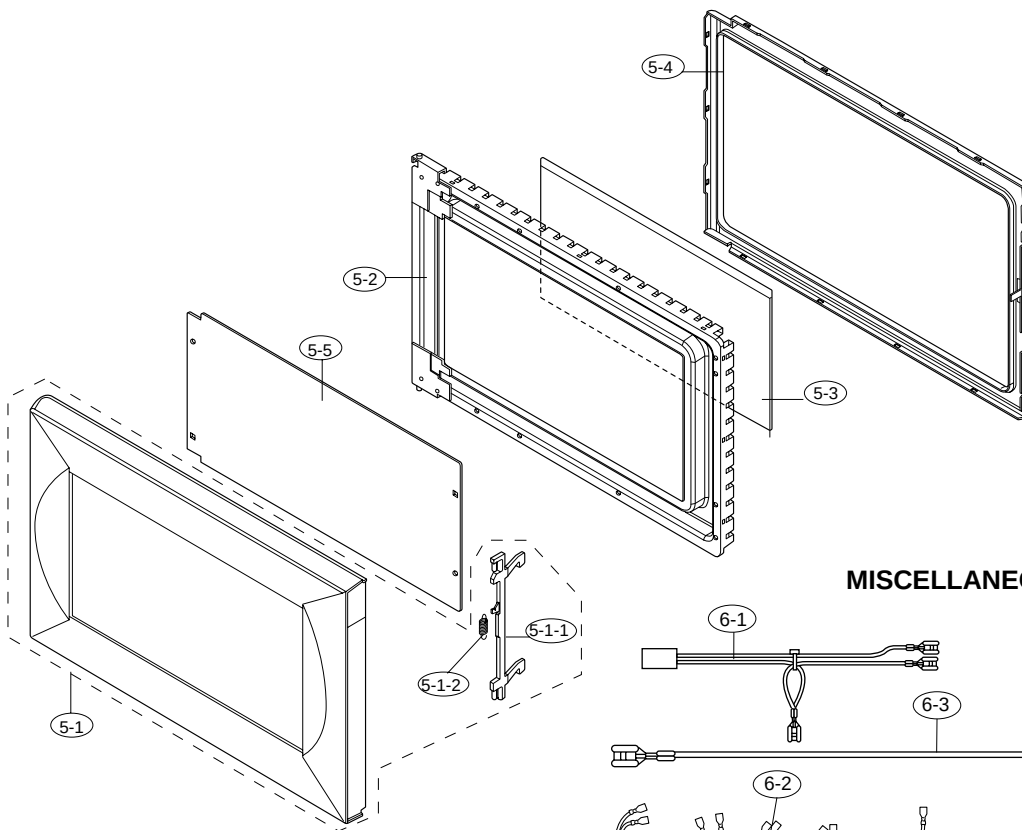
Defective parts requiring return should be returned as indicated in the Service Policy.



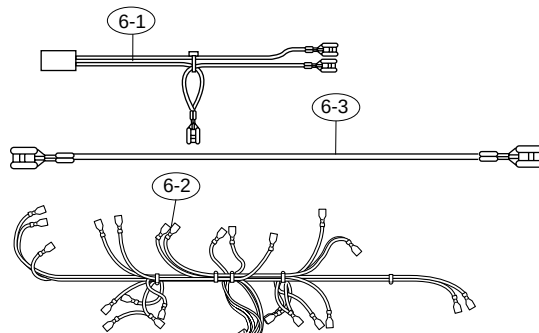
CONTROL PANEL PARTS



DOOR PARTS



MISCELLANEOUS



Actual wire harness may be different from illustration.

PACKING AND ACCESSORIES



Non-replaceable items.

SHARP

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